In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1. (Currently Amended) A process for manufacturing complex parts and devices comprising:
 - (a) utilizing a CAD environment to design a part or device to be created;
- (b) converting the CAD designed part or device into a heterogeneous material and multi-part assembly model which can be used for multi-nozzle printing; and
- (c) printing the designed part or device using <u>multiple</u>, different, specialized nozzles.
- 2. (Original) The process of claim 1 further comprising using Boolean, scaling, smoothing, mirroring, or other operations to modify the CAD design prior to conversion into a heterogeneous material and multi-part assembly model.
- 3. (Original) The process of claim 1 wherein in step (a) data taken from MRI, CT or other patient specific data is imported into the CAD environment to design the part or device to be created.
- 4. (Original) The process of claim 1 wherein a biomimetic and non-biomimetic feature is designed into the part or device.
- 5. (Original) The process of claim 1 wherein the part or device comprises a tissue engineering device and printing in step (d) involves direct deposition of cells or biological factors.

Amendment and Response to Notice of Non-Compliant Amendment mailed on May 6, 2008 Serial No. 10/540,968

- 6. (Original) The process of claim 5 wherein direct cell deposition improves histological accuracy, cell ratios, and spatial patterning of cells in the part or device.
- 7. (Original) The process of claim 1 wherein the part or device produced comprises an artificial organ, a tissue scaffold, an artificial vasculature or channel system, or a sample for cytotoxicity testing.
- 8. (Original) The process of claim 1 wherein the part or device produced comprises a biochip, biosensor, bionic, cybernetic, mechanoactive, or a bioactive tissue scaffold.
- 9. (Original) The process of claim 1 wherein the part or device is used in drug delivery.
- 10. (Currently Amended) A multi-nozzle biopolymer deposition apparatus comprising:
- (a) a data processing system which processes a designed scaffold model and converts it into a layered process tool path;
 - (b) a motion control system driven by the layered process tool path; and
- (c) a material delivery system comprising multiple nozzles of different types and sizes which deposits for simultaneously depositing specified hydrogels with different viscosities thereby constructing a scaffold from the designed scaffold model.